Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

REFRACTORY CERAMIC FIBER (GENERIC)

Company Identification
Chevron Products Company
Marketing, MSDS Coordinator
6001 Bollinger Canyon Road
San Ramon, CA 94583
United States of America

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (800) 424-9300 or (703) 527-3887
Health Emergency
ChevronTexaco Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
MSDS Requests: (800) 689-3998

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Refractory ceramic fiber (generic)	Mixture	100 %weight

SECTION 3 HAZARDS IDENTIFICATION

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EMERGENCY OVERVIEW

- MAY CAUSE RESPIRATORY TRACT IRRITATION IF INHALED
- CAUSES EYE IRRITATION
- CANCER HAZARD - CAN CAUSE CANCER

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IMMEDIATE HEALTH EFFECTS
Eye: Contact with the eyes causes irritation. Symptoms may include pain, tearing, reddening, swelling and impaired vision.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Not expected to be harmful if swallowed.
Inhalation: The dust from this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS:
Cancer: Prolonged or repeated exposure to this material can cause cancer. Contains material(s) which appear on the following list(s) of carcinogens: <IARC> <NTP>
Risk depends on duration and level of exposure. See Section 11 for additional information.

SECTION 4 FIRST AID MEASURES

Eye: Flush eyes with water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get medical attention if irritation persists.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: If swallowed, get medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.
Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 0 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: Not Applicable
Autoignition: Not Applicable
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will not burn. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: None known .

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill Management: Handling of RCF products should be done in a manner that will create the least amount of airborne dust. RCF should be worked with while wet. All spills and debris should be cleaned or vacuumed as soon as feasible with a HEPA filtered vacuum. Compressed air and dry sweeping should not be used to clean up RCF spills. Persons entering the RCF contaminated area must comply with all instructions in the Exposure Controls/Personal Protection section.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Do not get in eyes, on skin, or on clothing. Do not breathe dust. Do not taste or swallow. Wash thoroughly after handling. Persons handling this material should observe all protective equipment recommendations described in section 8.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted.
Skin Protection: No protective clothing is normally required.
Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: High Efficiency Particulate Air.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.
Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Cristobalite (SiO2)	ACGIH	.05 mg/m3	--	--	--
Cristobalite (SiO2)	OSHA Z-1	15 mg/m3	--	--	--
Refractory ceramic fiber (generic)	ACGIH	.2 fibers/cc	--	--	A2

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: White
Physical State: Solid, wool-like fibrous material
Odor: No Data Available
pH: Not Applicable
Vapor Pressure: Not Applicable
Vapor Density (Air = 1): Not Applicable
Boiling Point: Not Applicable
Solubility: Insoluble
Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 2.56
Viscosity: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: None.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.
Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.
Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

Two toxicological studies, completed in the early to mid-1980s, showed refractory ceramic fibers (RCF) to be potentially carcinogenic to laboratory animals (rats and hamsters). The Thermal Insulation Manufacturers Association (TIMA) sponsored a third, more comprehensive animal inhalation oncogenicity study. In this study groups of rats and hamsters were exposed to either 250 fibers/cc of RCF, 5,000 fibers/cc of chrysotile asbestos (as positive controls), or filtered pure air (as negative controls). The RCF-exposed animals produced many more cases of lung cancer and pleural mesothelioma than the asbestos-exposed animals, while the pure air-exposed animals had no cancer cases. We recommend that RCFs be handled in a manner similar to asbestos.
RCF poses an additional health concern in its after-service state due to the formation of cristobalite, a form of crystalline silica. Upon heating to over 1800F, RCF can undergo partial conversion into cristobalite. Cristobalite exposure may cause lung damage (silicosis) when breathed in excessive concentration. The International Agency for Research on Cancer (IARC) has classified crystalline silica as group 2A, probably carcinogenic to humans. An OSHA 8-hour TWA of 0.05 mg/m3 has been established for cristobalite respirable dust.
In lifetime studies, tumors have developed in animals given abdominal injections of refractory ceramic fibers (RCF). Similar tumors have been observed in animals given injections of other fibers such as asbestos. While there is no evidence that swallowing RCF causes tumors in humans, there is some evidence from animal studies that swallowing asbestos has resulted in the formation of tumors. Therefore, RCF should be treated as though they may behave in a similar fashion.

The US EPA has made the determination that crystalline silica is the chemical substance which is most structurally similar to silicoaluminophosphate and for which EPA has data. Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources has been classified by the International Agency for Research on Cancer (IARC) as carcinogenic to humans (Group 1). Repeated inhalation of the dust may cause insidious lung injury and possibly silicosis. In patients with silicosis, areas of the lungs become filled with scar tissue. The signs and symptoms may include cough, shortness of breath, difficulty in breathing, and loss of weight. The disease can progressively worsen and result in death. Some studies have reported an association between exposure to crystalline silica and hepatic silicosis and well as glomerulonephritis.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is not expected to be harmful to aquatic organisms.

ENVIRONMENTAL FATE
This material is not expected to be readily biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Name: NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR
DOT Hazard Class: NOT APPLICABLE
DOT Identification Number: NOT APPLICABLE
DOT Packing Group: NOT APPLICABLE

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1.	Immediate (Acute) Health Effects:	YES
2.	Delayed (Chronic) Health Effects:	YES
3.	Fire Hazard:	NO
4.	Sudden Release of Pressure Hazard:	NO
5.	Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	08=PA RTK

The following components of this material are found on the regulatory lists indicated.

Cristobalite (SiO2)	01-1, 02, 04, 05, 06, 08
Refractory ceramic fiber (generic)	01-2B, 02

CHEMICAL INVENTORIES:
CANADA: All the components of this material are on the Canadian DSL or have been notified under the

New Substance Notification Regulations, but have not yet been published in the Canada Gazette.
UNITED STATES: All of the components of this material are on the Toxic Substances Control Act (TSCA) Chemical Inventory.

WHMIS CLASSIFICATION:
Class D, Division 2, Subdivision A: Very Toxic Material - Carcinogenicity
Class D, Division 2, Subdivision B: Toxic Material - Skin or Eye Irritation

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 0 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1 - 16.

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - ChevronTexaco	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.